ANNUAL REPORT OF THE CENTRAL METEOROLOGICAL OBSERVATORY OF JAPAN

FOR

THE YEAR 1908.

PART II. #1,

ON

THE BAROMETRIC DEPRESSIONS

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The part II of the Annual report of the Central Meteorological Observatory of Japan for the year 1908 consists of :—

1. *On the Barometric depressions in the year* 1908.
2. *On the Precipitation in the year* 1908.
3. *On the Earthquakes in the year* 1908.
4. *Magnetic Observations in the year* 1908.

ON THE BAROMETRIC DEPRESSIONS

IN

THE YEAR 1908.

INTRODUCTION.

The present report contains the result of investigations on typhoons, continental cyclones and secondary depressions that passed over Japan and the neighbouring seas during the year 1908. The documents used in preparing this report were the manuscripts of tridaily weather charts of this Observatory, and the storm reports from the provincial meteorological stations and naval semaphores. The meteorological logs taken on board His Majesty's Ships, merchant marines have also been used, in so far as they are available.

The weather charts published by the Zikawei Observatory and Monthly Bulletines of the Manila Central Observatory for 1908 have been consulted.

The present volume consists of two parts: the first part contains a general review of the barometric depressions in each month, and the second part, detailed descriptions of more important cyclonic storms. In the general review of depressions, their origins, motions, and lowest barometric readings are concisely stated. But in cases in which the depressions caused unusual phenomena such as severe storms, heavy rainfalls, strong gales, etc., more lengthy descriptions are given; and in the description of more important cyclonic storms, brief statements of their appearances, passages, and the state of weather are given. Damages caused by storm and inundation attending the atmospheric perturbations are stated. The tracks of all the depressions described in the text are fully exhibited on the charts at the end of the volume, and those of severe typhoons and cyclones are given in thick lines. Each of the small circles in the track indicates the position of the centre of depression at the hour specified by the figures printed near it. The figures near the small circle denote the date, and the alphabet the time. "a" stands for 6 a.m.; "b" for 2 p.m and "c" for 10 p.m. The figures within the circle denote the depth of the centre, but for the sake of shortness the hundreds of the barometric height is omitted.

I. GENERAL REVIEW OF THE BAROMETRIC DEPRESSIONS.

January.—Several depressions visited this country and the neighbouring seas during this month. But most of them were low areas of no special importance. Among them the eight cyclones below described are noteworthy. None of them however caused serious storms.

1. *Depression* (6—8) *of the Pacific.*—Appeared in the sea lying between the Riukiu and Bonins on the 6th. P.M. Movin ; towards NE, it passed over the vicinity of the island of Hachijo on the 7th, and over the sea east of Kinkasan on the 8th., and started off towards N. of the Pacific. L. B 755 mm.

2. *Depression* (7 - 8) *of the Japan Sea*—Developed in the sea east of Oki on the 7th., passing through towards NE and entered the Pacific, crossing over NE Japan on the 8th. L. B. 755 mm.

3. *Depression* (14—15) *of the Pacific coast.*—Appeared in the sea south of Riukiu, on the morning of the 14th. Moving towards NE. the depression passed near the island of Hachijo on the 15th. L. B. 755 mm.

4. *Depression* (14—15) *from the Ishigakijima.*—Appeared in the sea between Yaeyama and Formosa on the 14th. Moving towards NE it entered the Pacific on the 15th and passed in the sea to the south near the island of Hachijo on the same night. L. B. 755 mm.

5. *Depression* (15—16) *from S. Japan Sea.*—Appeared in the southern part of the Japan sea on the morning of the 15th. Moving towards NE, it crossed N.E. of Japan and entered the Pacific. L. B. 750 mm.

6. *Continental Depression* (19—20) *from the lower Yangtse Valley.*—Appeared in the lower Yangtse Valley on the 19th, moved towards NE and arrived in the southan part of the Japan Sea on the morning of the 20th. There it changed its course towards the southeast, and traversing Central Japan went out to the Pacific. L. B. 749 mm.

7. *Continental Depression* (27—28) *from N. China.*—Appeared in N. China on the 27th. Moving towards ESE, the depression traversed N. Korea and the Japan Sea, and approached the NW. coast of this country. It travelled over the NE of Japan on the 28th, and passed into the Pacific.
L. B. 750 mm.

8. *Continental Depresssion* (30—31) *from the lower Yangtse Valley.*—Appeared in the lower Yangtse Valley on the 30th. Moving towards ENE, the depresssion travelled over the Eastern Sea, and the Inland sea district, and

passed into the Pacific on the night of the 31st. Stormy weather prevailed in Japan proper during the visitation of the cyclone. L. B. 744 mm.

February.—The principal barometric depressions which passed over this country and the neighbouring seas during this month were eleven in all. Most of them were low areas of moderate intensity and caused no serious storms in this country.

9. *Depression* (4—6) *from the South Japan Sea.* Developed in the sea east of the Tsushima group on the 4th. Moving towards ENE the depression crossed over the southern part of the Japan Sea and NE Japan from the 5th to the 6th, and entered the Pacific. L. B. 740 mm.

10. *Depression* (4—6) *of the Pacific.*—Appeared in the sea west of the Bonins on the night of the 4th, moved towards ENE, and travelled along the east coast of Japan up to the Kuriles on the 6th. L. B. 740 mm.

11. *Depression* (7—8) *from the South Japan Sea.*—Developed in the northeast of the Tushima group on the 7th. Moving towards ENE the depression travelled along the coast of the Japan Sea and crossed over NE Japan into the Pacific on the 8th. L. B. 758 mm.

12. *Depression* (13—15) *from the Eastern Sea of China.*—Appeared in the Eastern sea on the 13th, moved towards E and entered the Pacific on the 14th. It passed to the north of the Bonins on the 15th. L. B. 750 mm.

13. *Depression* (14—15) *from the S Japan Sea.*—Developed in the S Japan Sea on the 14th, moved towards NE and crossed over the Tsugaru district into the Pacific on the 15th. L. B. 754 mm.

14. *Depression* (17) *from the S Sea of Riukiu.*—Appeared in the sea south of Riukiu on the 17th, moving towards ESE and passed near the Island of the Bonins on the night of the same day. L. B. 758 mm.

15. *Depression* (20) *of the Pacific.*—Appeared between Okinawa and Bonins on the morning of the 20th. Moving towards E it passed near the Island of the Bonins on the afternoon of the same day. L. B. 754 mm.

16. *Depression* (21—22) *from the Eastern Sea.*—Appeared in the Eastern Sea on the afternoon of the 21st. Moving towards the north-east, the depression travelled along the southern coast of Japan and passed into the Pacific on the night of the 22nd. L. B. 754 mm.

17. *Depression* (24) *of the Pacific.*—Appeared between Okinawa and Bonins on the morning of the 24th, and made its way towards the northeast. On the

afternoon, it passed the south of Hachijo Island. L. B. 755 mm.

18. *Continental Depression* (28—*March* 1) *from the Yangtse Valley.*—Started from the Yangtse Valley on the 28th. Making its way towards the east it crossed the Eastern Sea, and then passing through the Tsushima straits entered the Japan Sea. On the afternoon of the 1st the depression traversed NE Japan and passed into the Pacific. L. B. 752 mm.

19. *Continental Depression* (28—*March* 1) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the afternoon of the 28th, and made its way towards the east. Crossing over the Eastern Sea and Southern Kiushiu it passed into the Pacific on the 1st. L. B. 750 mm.

March.—During the month of March, ten depressions were traced in our area. Most of them were the continental depressions which came from Northern China, and the Yangtse Valley. The depression of the 6th to the 9th, and that of the 9th to the 12th, were most noteworthy, and caused heavy snow-storm in Hokkaido and NE of Japan.

20. *Continental Depression* (3—6) *from South China.*—Started from South China and appeared in the Eastern Sea on the afternoon of the 3rd. Moving eastward, the depression entered the Pacific on the morning of the 4th and travelled along the coast of Japan proper. On the afternoon of the 6th it passed towards the Southern Kuriles. A rather severe storm occurred in Japan proper and Hokkaido during the visitation of the depression. L. B. 747 mm.

21. *Depression* (6—9) *from the vicinity of the Yaeyama group.*—Appeared near the Yaeyama group on the afternoon of the 6th, and made its way towards the northeast. On the afternoon of the 7th, it came near the southern coast of Shikoku, and then travelling along the south and the southeastern coasts of Japan proper, it passed into the Pacific on the morning of the 9th. This depression was shallow at first, but as it moved northeastwards, it developed very rapidly and caused a severe snow-storm in Northern Japan and Hokkaido. L. B. 734 mm.

22. *Depression* (9—12) *from the Eastern Sea.*—Appeared in the Eastern Sea on the night of the 9th. Moving towards the east, it entered the Pacific and then began to make its way along the southern coast of Japan on the afternoon of the 10th. On the afternoon of the 11th, it was located off the eastern coast of Japan, where it changed its course towards the north. On the night of the same day, the depression crossed Hokkaido and passed into

the Okhotsk. The intensity of this depression was very weak in the beginning but it considerably developed as it went up to the higher latitudes, and caused a severe snow-storm in Northern Japan and Hokkaido.

L. B. 734 mm.

23. *Depression* (10—11) *from the South Japan Sea.*—Appeared in the Tsushima Strait on the morning of the 10th, and moved on northeastwards. On the afternoon of the following day the depression crossed the NE of Japan and passed into the Pacific. L. B. 750 mm.

24. *Continental Depression* (16—18) *from the Yangtse Valley.*—Developed in the Yangtse valley on the morning of the 16th and entered the Eastern Sea. On the morning of the 17th, it appeared near the Goto Islands and finally traversing the northern part of Kiushiu, it passed into the Pacific. This depression caused stormy weather in Kiushiu and Western Japan. L. B. 760 mm

25. *Depression* (19—20) *from the S Japan Sea.*—Appeared in the southern part of Japan Sea on the night of the 19th and made its way towards the northeast. On the night of the following day, the depression traversed NE of Japan and passed towards the Southern Kuriles. L. B. 747 mm.

26. *Continental Depression* (24—26) *from N China.*—Appeared in N China on the 24th and made its way towards the east. Traversing the northern portion of Korea, it entered the Japan Sea, finally disappearing towards S. Saghalien. L. B. 752 mm.

27. *Continental Depression* (29—30) *from N China.* Started from North China and appeared near Tiensin on the morning of the 29th. Moving eastwards, it crossed Northern Korea and entered the Japan Sea. On the afternoon of the 30th the depression traversed the northern extremity of Hokkaido and passed into the Okhotsk. L. B. 745 mm,

28. *Continental Depression* (29—30) *from the Yellow Sea.*—Appeared in the Yellow Sea on the afternoon of the 29th, and traversing Korea entered the Japan Sea. On the afternoon of the 30th the depression crossed NE of Japan and passed into the Pacific. L. B. 749 mm.

29. *Continental Depression* (30—31) *from N Korea.*—Appeared in N Korea on the morning of the 30th, and moving northeastwards entered the Japan Sea. On the morning of the 31st, the depression crossed the northern part of Hokkaido and passed into the Okhotsk. L. B. 742 mm.

April—During the month of April, fourteen depressions were traced on our charts.

Most of them were continental depressions which started from the Yangtse Valley.

The deepest was that of the night of the 6th, with the mercury below 742 mm, as the centre crossed Northern Hokkaido.

The depression which travelled along the Pacific coast on the 7th to the 9th, was rather intense character and caused a severe snow-storm in the SE of Japan.

30. *Continental Depression* (*March* 31—*April* 2) *from the Yangtse Valley.*—Appeared in the lower Yangtse Valley on the afternoon of the 31st. Making its way towards the northeast, it crossed the Eastern Sea and then passing through the Tsushima Straits entered the Japan Sea. On the morning of the 2nd, the depression traversed the northern extremity of Hokkaido and passed into the Okhotsk. L. B. 749 mm.

31. *Continental Depression* (3—4) *from the Yangtse Valley.*—Appeared in the lower Yangtse Valley on the afternoon of the 3rd, and moved on an easterly course. On the morning of the 4th the depression crossed the southern part of Kiushiu and passed into the Pacific. L. B. 757 mm.

32. *Continental Depression* (4—6) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the afternoon of the 4th and made its way towards the northeast. On the morning of the 5th it arrived the Tsushima Straits and then travelled along the coast of Japan Sea. On the afternoon of the 6th the depression crossed Northern Hokkaido and passed into the Okhotsk. This depression caused stormy weather in this country. L. B. 742 mm.

33. *Depression* (4—5) *from the Eastern Sea.*—Appeared in the Eastern Sea on the afternoon of the 4th. Moving towards the northeast, the depression travelled along the southern coast of Japan and passed into the sea off Choshi on the night of the 5th. L. B. 758 mm.

34. *Continental Depression* (8—9) *from the Yangtse Valley.*—It probably started from the Yangtse Valley and appeared in the southwestern coast of Kiushiu on the morning of the 8th. Taking its course eastwards, the depression travelled along the south coast of Japan and passed the south of Choshi on the afternoon of the 9th. L. B. 758 mm

35. *Depression* (7—9) *of the Pacific.*—Appeared near the Yaeyama group on the night of the 7th, and moving northeastwards entered the Pacific. Then it began to make its way along the southern coast of Japan and passed the south of Hachijo on the night of the 9th. The both depressions caused a severe snowstorm in the SE of Japan. The railway trafics and the tele-

graphic communications were suspended for a few days. L. B. 757 mm.

36. *Continental Depression* (11—13) *from the Yangtse Valley.*—It probably started from the Yangtse Valley and appeared near Quelpart Island on the morning of the 11th. Moving towards the northeast, it passed through the Tsushima Straits on the morning of the 12th, and then travelled along the coast of Japan Sea. On the afternoon of the 13th the depression crossed Southern Saghalien and entered the Okhotsk. L. B. 748 mm.

37. *Depression* (14—15) *of the Pacific Coast.*—Appeared near the Riukiu Islands on the afternoon of the 14th and made its way toward the northeast. On the 15th the depression passed the south of Hachijojima. L. B 750 mm

38. *Continental Depression* (20—21) *from N Korea.*—Appeared in N Korea on the afternoon of the 20th and made its way toward the northeast. On the morning of the 21st the depression entered the Sea of Okhotsk by passing through the Straits of Soya. L. B. 755 mm.

39. *Depression* (21—23) *from the Yellow Sea.*—Appeared in the Yellow Sea on the morning of the 21st. Moving toward the northeast, it crossed the southern part of Korea and then travelled along the coast of Japan Sea. On the afternoon of the 23rd the depression traversed Northern Hokkaido and passed into the Okhotsk. L. B. 752 mm

40. *Depression* (22—23) *from the Eastern Sea.*—Appeared in the Eastern Sea on the morning of the 22nd and made its way towards the northeast. Traversing N. Kiushiu and Western Japan, it entered the Japan Sea. On the afternoon of the 23rd the depression came near the western coast of Hokkaido and finally passed into the Okhotsk Sea. L. B. 753 mm

41. *Secondary Depression* (22—23) *of Kiushiu.*—Appeared near Oita in Kiushiu on the afternoon of the 22nd. Taking its course eastward, the depression travelled over the Inland Sea district and Tokaido, and passed into the Pacific on the afternoon of the 23rd. L. B. 752 mm

42. *Depression* (24—25) *from the Yellow Sea.*—Appeared in the Yellow Sea on the morning of the 24th. Moving towards the northeast, it crossed Northern Korea and then travelled over the Japan Sea. On the afternoon of the 25th the depression passed towards the Okhotsk. L. B. 750 mm.

43. *Depression* (25—27) *from the vicinity of the Yaeyama group.*—Appeared near the Yaeyama group on the morning of the 25th and made its way toward the northeast. On the afternoon of the 26th, it crossed the central part of

Kiushiu and then travelled along the southern coast of Japan. On the night of the 27th, it passed towards the N. Pacific. L. B. 754 mm.

May.—During the month of May, eleven depressions were traced on our charts. Most of them were continental depressions which came from the northern China and the Yangtse Valley. There were two depressions the barometric readings of which were lower than 740 mm.

The typhoon of the 29th to the 31st, which came from the vicinity of the Philippine Islands, caused a rather severe storm in the southwestern Islands.

44. *Continental Depression* (1—4) *from the Yangtse Valley.*—Developed in the Yangtse Valley on the afternoon of the 1st and entered the Eastern Sea. On the afternoon of the 2nd, it reached the neighbourhood of Quelpart Island and on the following day it passed through the Korea Strait. On the afternoon of the 4th, it disappeared in the central part of the Japan Sea.
L. B. 754 mm.

45. *Depression* (1—6) *from the vicinity of the Yaeyama group.*—Appeared near the Yaeyama group on the afternoon of the 1st and approached to the southern coast of Kiushiu on the afternoon of the 3rd. Then the depression travelled along the south and the southeastern coasts of Japan proper and on the morning of the 6th, it passed into the N Pacific. This depression caused stormy weather in this country. L. B. 752 mm.

46. *Continental Depression* (7—10) *from N China.*—On the morning of the 7th this depression appeared in N. China and with its course eastwards it crossed the northern part of Korea and entered the Japan Sea. Then moving northeastwards, it passed over to the Northern Hokkaido on the afternoon of the 9th, and finally entered the Pacific Ocean on the next morning.
L. B. 750 mm.

47. *Continental Depression* (8—11) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the 8th, and on the morning of the 10th, it came near the SW coast of Kiushiu, whence with its course eastwards it passed into the Pacific Ocean. L. B. 750 mm.

48. *Depression* (9—13) *of the Pacific.*—Appeared near the Yaeyama group on the night of the 9th, and made its way towards the northeast. On the afternoon of the 10th, it approached the southern coast of Kiushiu and then travelled along the Pacific coast. On the night of the 13th the depression went towards the N Pacific. L. B. 752 mm.

49. *Continental Depression* (10—12) *from the N. China.*—Appeared in the N

China on the morning of the 10th and moving southeastwards, entered the Japan Sea. On the morning of the 12th the depression began to take its course eastwards and passing over N E of Japan it entered the Pacific.

L. B. 748 mm.

50. *Continental Depression* (16—18) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the morning of the 16th, and made its way towards the northeast. On the morning of the 17th, it passed through the Tsushima Straits and on that afternoon the depression reached the central part of the Japan Sea. On the afternoon of the 18th, it crossed the southern part of Hokkaido and passed into the Pacific. This depression was shallow in the beginning, but as it moved northwards, it developed very rapidly and caused stormy weather in this country. L. B. 735 mm.

51. *Depression* (17—18) *of the Pacific coast.*—This depression appeared near the Kii Channel on the afternoon of the 17th and travelled towards the northeast, along the Pacific coast. On the night of the same day, it approached the Boso Peninsula, and on the following day, it passed towards the North Pacific. L. B. 735 mm.

52. *Continental Depression* (19—21) *from the North China.*—Started from the North China and appeared near the Shangtung peninsula on the afternoon of the 19th. Moving towards the northeast, it crossed the North Korea and entered the Japan Sea On the morning of the 21st the depression passed towards the Southern Saghalien. L. B. 750 mm.

53. *Continental Depression* (22—24) *from the North China.*—This depression appeared near the Shangtung peninsula on the morning of the 22nd. Traversing the southern part of Korea it entered the Japan Sea. On the afternoon of the 24th the depression crossed the Northern Hokkaido and passed into the Pacific. L. B. 752 mm.

54. *Typhoon* (29—31) *from the vicinity of the Philippine Islands*—This typhoon appears to have come from the neighbourhood of the Philippine Islands taking its course northwestwards. On the 27th the typhoon came near the Ballintang channel, where it changed its course towards the northeast. On the afternoon of the 29th, it appeared near the Riukiu Islands, and on the morning of the 30th, it approached the island of Amami-Oshima. On the 31st the typhoon passed the south of Hachijojima. L. B. 742 mm.

June.—The total number of the depressions that passed Japan and the neighbouring seas during this month was fourteen.

Among these six were continental depressions, three secondary depressions, four low areas, and one was a typhoon of moderate intensity.

The secondary depression of the 8th was also noteworthy and caused a thunder and heavy hailstorm in the S E of Japan.

55. *Continental Depression* (1—3) *from the North Korea.*—Appeared in the North Korea on the afternoon of the 1st and made its way towards the northeast. On the morning of the 3rd the depression crossed the northern part of Hokkaido and passed into the Okhotsk. L. B. 746 mm.

56. *Depression* (4—6) *from the vicinity of the Yaeyama group.*—Appeared near the Yaeyama group on the night of the 4th, whence it moved towards the northeast. On the morning of the 6th the depression was located off the southern coast of Shikoku and finally went out into the Pacific. L. B. 750 mm.

57. *Secondary Depression* (6) *of the Central Japan.*—Developed near Nagano on the afternoon of the 6th and moved eastwards, finally entering the Pacific. L. B. 750 mm.

58. *Continental Depression* (6—9) *from the North Korea.*—Appeared in the North Korea on the afternoon of the 6th and made its way towards the east. On the afternoon of the 7th, it came to the central part of the Japan Sea. On the afternoon of the 8th the depression crossed the southern part of Hokkaido and passed into the Pacific. L. B. 748 mm.

59. *Secondary Depression* (8) *of the Central Japan.*—Developed near Kofu on the afternoon of the 8th and moved towards the ESE. On the night, it passed into the Pacific. This secondary depression caused a thunderstorm in the S E of Japan.

A heavy hailstorm visited Tokio, during the progress of a thunderstorm. At 3.20 pm a heavy peal of thunder was heard, followed first by a shower of rain, and then by a heavy hailstorm, which lasted eighteen minutes. Some of the hailstones were as big as marbles, weighing about 120 grammes.

Such a hailstorm has not been experienced in Tokio since the Observatory was established in 1875.

A large number of street lamps and glass roofs and windows were smashed by the hailstones. Two persons were reported to have been injured during the thunder and hailstorm. L. B. 753 mm.

60. *Depression* (10—11) *from the Eastern Sea.*—Appeared in the Eastern Sea on the morning of the 10th, and moving northeastwards, entered the Pacific.

On the morning of the 11th the depression passed south of Hachijojima.

L. B. 751 mm.

61. *Continental Depression* (10—11) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the morning of the 10th, and made its way towards the east. On the morning of the 11th the depression approached the southern coast of Kiushiu, whence it finally went out into the Pacific.

L. B. 750 mm.

62. *Depression* (11—14) *from the Eastern Sea.*—Appeared in the southern part of the Eastern Sea on the afternoon of the 11th. Moving towards the northeast, it passed through the Tsushima Straits on the afternoon of the 12th and then travelled along the coast of Japan Sea. On the night of the 14th the depression passed towards the Sourthern Saghalien.

L. B. 752 mm

63. *Secondary Depression* (12—13) *of the Pacific coast.*—Developed in the vicinity of Oita on the afternoon of the 12th and travelled towards the northeast along the Pacific coast. On the afternoon of the 13th, it approached the Boso peninsula and on the following day it passed into the Pacific.

L. B. 752 mm.

64. *Depression* (14—16) *from the Eastern Sea.*—Appeared in the Eastern Sea on the morning of the 14th, and made its way towards the northeast. On the afternoon of the same day, it approached the western coast of Kiushiu and on the following day, it passed through the Korea Straits. On the morning of the 16th it disappeared in the southern part of the Japan Sea.

L. B. 755 mm

65. *Continental Depression* (17—19) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the morning of the 17th, whence it moved towards the NNE. On the morning of the 18th, it was located in the central part of the Yellow Sea. On the 19th it disappeared in the northern part of Korea.

L. B. 746 mm.

66. *Typhoon* (21—24) *from the vicinity of the Philippine Islands.*—Coming from the neighbourhood of the Philippine Is. this typhoon appeared near the Yaeyama group on the night of the 21st. Then the typhoon began to move northeastwards, and on the morning of the 23rd, it approached Cape Ashizuri. On the afternoon of the same day, it traversed the SE of Japan, and passed towards the southern Kuriles. This typhoon caused stormy weather in this country. L. B. 742 mm.

67. *Continental Depression* (24—26) *from the Yangtse Valley.*—This depression, which first appeared in the Yangtse Valley on the 24th, made its progressive

motion towards the ENE. and on the morning of the 25th, it was found in the central part of the Yellow Sea. On the night of the same day the depression passed over the southern part of Korea, and on the night of the 26th, it crossed the Central Japan thus entering the Pacific.

L. B. 742 mm.

68. *Continental Depression* (27–30) *from the Yangtse Valley.*— Appeared in the Yangtse Valley on the afternoon of the 27th and made its way towards the northeast On the 28th the depression entered the Yellow Sea and then crossing the southern part of Korea, entered the Japan Sea. On the morning of the 30th the depression came near the northwest coast of Japan, where it was finally disappeared. L. B. 747 mm.

July.—The principal barometric depressions which passed over the Empire and the neighbouring seas during this month, were six in all. Beside these there were a number of small depressions which could not be traced on our charts.

Most of the six depressions started from the Yangtse Valley. The depression which travelled over the Western and the Central Japan on the 16th, was rather intense character and caused a heavy rainfall in several places of Japan proper.

69. *Continental Depression* (*June 30 – July 2*) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the morning of the 30th. Moving towards the northeast, it passed through the Tsushima Straits on the morning of the 1st and then travelled along the coast of the Japan Sea. On the night of the 2nd the depression came near the northwestern coast of Japan, where it was finally disappeared. L. B. 746 mm.

70. *Depression* (1—2) *from the Yellow Sea.* Appeared in the Yellow Sea on the morning of the 1st, whence it moved towards the ESE. Traversing the northern part of Kiushiu, it entered the Pacific. On the afternoon of the 2nd the depression passed south of Hachijo. L. B. 747 mm.

71. *Continental Depression* (4—5) *from the Yangtse Valley.*—Appeared in the Lower Yangtse Valley on the afternoon of the 4th and moved on an eastery course. On the afternoon of the 5th, the depression crossed the southern part of Kiushiu and passed the Pacific. L. B. 750 mm.

72. *Depression* (6—7) *from the Eastern Sea.*— Appeared in the southern part of the Eastern Sea on the afternoon of the 6th. Making its way towards the northeast, it crossed the southern extremity of Kiushiu and passed the Pacific. L. B. 752 mm.

73. *Continental Depression* (9—12) *from North China.*—Coming from North China, this depression appeared near the Liaotung peninsula on the morning of the 9th. Then the depression began to move eastwards, and on the night of the same day, it entered the Japan Sea by crossing the northern part of Korea. On the night of the 11th, it passed through the Tsugaru Strait, and finally went out to the Pacific. L. B. 750 mm.

74. *Continental Depression* (16—18) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the morning of the 15th and made its way towards the ENE. On the night of the same day, it came near Quelpart Island and on the following day it travelled over the Western and the Central Japan. On the morning of the 17th the depression was located the eastern coast of Japan, where it changed its course towards the northeast. On the morning of the 18th it passed towards the S Kuriles. L. B. 746 mm.

August. During this month, three typhoons passed over this country and the neighbouring seas.

The typhoon which traversed the Central Japan on the night of the 7th, was intense character and caused a severe storm in this country. The typhoon of the 22nd to the 29th, was also noteworthy, and a severe storm occurred in Kiushiu and the Korean peninsula.

75. *Typhoon* (3—8) *from the vicinity of the Philippines.*—This typhoon appeared eastwards of the Philippines on the 3rd and made its way towards the northwest. On the morning of the 4th the typhoon came to the sea south of the Riukiu, where it changed its course towards the northeast. On the afternoon of the 6th, the typhoon approached the Island of Amami-Oshima. On the afternoon of the 7th it touched Cape Muroto, and on the night it came to the Bay of Ise. Then, it passed over the Central Japan and entered the Japan Sea, finally disappearing towards the South of Saghalien. This typhoon caused a severe storm in this country. L. B. 732 mm.

76. *Typhoon* (15—21) *from the Pacific.* This typhoon seems to have originated in the neighbourhood of the Carolines. On the afternoon of the 15th, it appeared on the south of the Yaeyama group. Taking northwesterly course, the typhoon passed between Ishigakijima and Formosa on the afternoon of the 16th, and entered the continent in the neighbourhood of Wenchow. Then the typhoon moved along the Yangtse, and on the afternoon of the 19th, it was lying near Ichang, where it changed its course towards the northeast. On the morning of the 21st, it was found in the Liaotung peninsula, and finally went towards the northeast. L. B. 745 mm.

77. *Typhoon* (22—29) *from the vicinity of the Marshall Islands.*—This typhoon

developed near the Marshall Islands, and appeared on the south of the Riukiu Islands on the morning of the 22nd. Moving slowly northwestwards, it passed the west of Okinawajima on the night of the same day and entered the Eastern Sea. On the afternoon of the 25th it reached the Lat. 31° N. where it changed its course towards the NNE. On the morning of the 27th the typhoon traversed the Central Korea, and travelled along the coast of Eastern Manchuria. On the morning of the 29th it went out towards Saghalien Island. L. B. 740 mm.

September.—The chief depressions which were noticed during this month, were eight in number. The typhoon which came from the eastern sea of Luzon and passed near Hachijo Island on the 13th, and the typhoon which visited the Bonins on the 30th, were noteworthy cyclones.

78. *Typhoon* (2—5).—Appeared to the southeast of the Riukiu on the 2nd, and started towards NE, passing over the sea off to the southern coast of Japan on the 3rd. The typhoon passed near the Island of Hachijo on the early morning of the 5th, causing a severe rainstorm on the southeastern coast of Japan and in the Island. L. B. 750 mm.

79. *Typhoon* (7—15).—Appeared to the east of Luzon on the 7th. The typhoon went towards N and recurved towards the NE in the sea off South Riukiu on the 8th, and passed over the sea to the southern coast of Japan. Severe storm occurred in the Southeastern Japan and in the Island of Hachijo. L. B. 739 mm.

80. *Depression* (11—15) *from the Yellow Sea.*—Appeared in the Yellow Sea on the morning of the 11th, and moved towards NNE. Passing over the Northern Korea, the cyclone entered the Japan Sea on the 15th, and arrived in the Central Japan Sea where it recurved towards NE. On the 15th the depression disappeared near the coast of Hokkaido. A severe rainstorm occurred in the Northern Korea on the 12th. L. B. 745 mm,

81. *Depression* (15—16) *from the Eastern Sea.*—Appeared in the sea north of Formosa on the 15th, moving towards ENE, and entered the Pacific, passing between the Islands of Oshima and Yakushima on the morning of the 16th. The cyclone passed near the Island of Hachijo on the 17th. L. B 750 mm.

82. *Continental Depression* (18—20) *from North China.*—Appeared in North China on the 18th, and arrived North Korea, starting towards SE on the 19th. Thence it moved towards NE, and passed into the Okhotsk,

crossing over Saghalien on the 20th. A severe rainstorm occurred there.
L. B. 740 mm.

83. *Typhoon* (29—30) *from the Bonins.*—Appeared in the sea south of the Bonin Islands on the morning of the 29th. On the night of the same day the centre passed to the west of the group, and travelled in a northeasterly direction. A severe rainstorm occurred in the Bonins, and resulted in heavy damage to plantation and property. L. B. 735 mm.

84. *Depression* (29—30) *of the Eastern coast of Japan.*—Appeared near Oshima Island near the southeastern coast of Japan on the night of the 29th. Moving towards NNE, the depression travelled along the eastern coast and over eastern Hokkaido. On the night of the 30th, it went out into the Okhotsk. Heavy rain fell near the track of the cyclone. L. B. 748 mm.

85. *Depression* (29—30) *from the Eastern Sea.*—The depression passed near Cape Shiomisaki and over the Enshu-nada on the 29th, and traversed southeastern Japan to the Pacific on the morning of the 30th. The depression caused a heavy rainfall in Tokio and the neighbourhood which caused a great deal of damage in the city. L. B. 750 mm.

October.—The number of the principal depressions which passed over this country and the neighbouring seas are seven. Of these the Luzon typhoon of the 13th and the Pacific typhoon of the 18th are most noteworthy.

86. *Continental Depression* (5—8) *from North China.* Developed in North China on the morning of the 5th, and travelled over the southern Manchuria and the eastern Siberia. On the morning of the 8th the depression passed into the Okhotsk Sea. A severe rainstorm occurred in Saghalien and Hokkaido.
L. B. 745 mm.

87. *Continental Depression* (6—8) *from the Yangtse Valley.*—Developed in the valley of the Yangtse on the 5th, and went towards ENE. It travelled over southern Korea and the Japan Sea, and passed into the Pacific, traversing NE of Japan. The depression caused a heavy rainfall in Japan.
L. B. 750 mm.

88. *Typhoon* (13—15) *of Southern Formosa.*—Appeared in the sea southeast of Luzon on the 12th, moved towards NW and crossed over North Luzon on the 13th. On the 14th the typhoon traversed the southern part of the Formosa Strait, and entered the continent. A heavy rainstorm occurred in Formosa and its neighbourhood. L. B. 740 mm.

89. *Typhoon* (16—19) *from the Caroline Islands.*—Appeared near the group

on the 16th, moved towards NW and arrived in the sea southeast of the Riukius on the 17th. There the typhoon recurved towards NE, and travelled over the Pacific to the south of Japan and passed between Hachijio Island and the Bonins on the 19th. L. B. 745 mm.

90. *Continental Depression* (23—27) *from Szechuen.*—Developed in the upper valley of the Yangtse on the 22nd, moved towards E and arrived near Shanghai on the 24th. After recurving towards NE the depression passed over the Yellow Sea and landed into Korea where it again recurved towards SE on the 25th. The depression traversed over the southern Japan Sea and the Western Japan on the 26th and went out into the Pacific on the 27th. The track of this depression was abnormal. L. B. 758 mm.

91. *Depression* (26—28) *from Siberia.*—Appeared in the neighbourhood of Lake Baikal in Siberia on the 26th, and arrived in North Korea, moving towards SE on the 27th. After recurving ENE the cyclone travelled over the Japan Sea and Northern Hokkaido, and entered into the Sea of Okhotsk on the early morning of the 28th, causing a rainstorm in the Northern Japan. L. B. 750 mm.

92. *Depression* (27—28) *from Western Japan Sea.*—Appeared in western Japan Sea on the 27th, and travelled over the Japan Sea and NE of Japan, and entered the Pacific on the 28th. L. B. 752 mm.

November.—The number of the principal depressions which visited this country during November is twelve. Most of them were continental cyclones which developed in Siberia, and Mongolia. The depression which crossed over NE of Japan on the night of the 27th, was the most remarkable cyclone of the month.

93. *Continental Depression* (1—4) *from Siberia.*—Appeared near Tomsk in Siberia, and moved towards ESE. The depression passed over North Korea and the Japan Sea. On the 4th, it entered into the Pacific, traversing NE of Japan. L. B. 760 mm.

94. *Continental Depression* (2—3) *from North Korea.*—Appeared in North Korea on the afternoon of the 2nd, and went towards NE. On the 3rd it crossed over Southern Saghalien, causing a rainstorm. L. B. 755 mm.

95. *Continental Depression* (4—6) *from the Yangtse Valley.*—Appeared in the neighbourhood of Hangchow in South China on the 2nd. Moving towards the east the cyclone traversed the Eastern Sea, and entered the Pacific on the 3rd. It passed the sea to the south of the Island of Hachijo on the 4th. L. B. 760 mm.

96. *Continental Depression* (6—8) *from North Korea.*—Developed in North Korea on the afternoon of the 6th. Moving toward SE the depression crossed over NE of Japan on the 7th. Thence it moved towards the northeast, and passed into South Kuriles on the 8th. This depression became very deep, after it crossed over our northeastern provinces, and caused a heavy rainstorm in northern Japan. L. B. 740 mm.

97. *Continental Depression* (8—9) *from North China.*—Coming from North China the depression appeared in the Liaotung peninsula on the 8th, and crossed over the Japan Sea and NE of Japan on the same day, and entered the Pacific. The cyclone passed the sea to the south of Nemuro on the morning of the 9th. L. B. 752 mm.

98. *Continental Depression* (12—14) *from North China.*—Appeared in North China on the 12th, and travelled over N. Korea and the Japan Sea. The cyclone passed over NE of Japan on the 13th, and entered the Pacific on the 14th. L. B. 754 mm.

99. *Continental Depression* (13—14) *from North China.*—Appeared in the Liaotung peninsula on the 13th. Following the former depression this cyclone moved towards the east, and entered the Pacific, crossing over NE provinces. The both cyclones caused the westerly gales in this country. L. B. 752 mm.

100. *Continental Depression* (16—17) *from North China.*—Appeared in North China on the 15th, and moved towards SE. After travelling the Japan Sea the cyclone crossed over NE of Japan and passed into the Okhotsk on the 17th, causing a severe rainstorm in Hokkaido. L. B. 745 mm.

101. *Continental Depression* (19—21) *from North China.*—Appeared in the Liaotung peninsula on the 19th. Moving towards ESE the cyclone crossed over North Korea, the Japan Sea and NE of Japan, and entered the Pacific on the 21st. L. B. 755 mm.

102. *Continental Depression* (25 - 27) *from North China.*—Appeared in North China on the 25th, and moved towards the East. Travelling over Liaotung and North Korea the cyclone entered the Japan Sea, and crossed over South Hokkaido to the Pacific on the 27th. L. B. 739 mm.

103. *Depression* (26—27) *from the South Japan Sea.*—Developed in the Southern Japan Sea on the 26th. Moving towards NE the depression crossed over NE of Japan, and entered to the Pacific on the 27th. This depression became very deep, and caused a heavy snowstorm in northern Japan. L. B. 730 mm.

104. *Continental Depression* (29—30) *from Siberia.*—Appeared in Siberia on the 28th, and travelled over Manchuria and North Korea on the 29th. On the 30th the cyclone travelled over Hokkaido, and passed to the Pacific.

L. B. 745 mm.

December.—The principal barometric depressions which passed over this country and the neighbouring seas during this month were thirteen in all. Most of them were the continental depressions which came from North China and the Yangtse Valley. The depressions of the 4th to the 6th and the 22nd to the 23rd were most noteworthy.

105. *Continental Depression* (4—6) *from North China*—Appeared in North China on the morning of the 4th, moved towards SE and arrived at the neighbourhood of Wladiostok on the morning of the 5th. Thence it travelled along the coast of Siberia and passed into the Okhotsk, crossing over Southern Saghalien on the morning of the 6th. A heavy storm prevailed in Northern Japan during the passage of the depression. L. B. 738 mm.

106. *Local depression* (6) *in Kai-Shinano provinces.*—Developed in the provinces on the morning of the 6th, and passed to the Pacific, moving towards SE.

L. B. 756 mm.

107. *Depression* (11—13) *from Formosa.*—Appeared in the sea near Formosa on the 11th, and moved towards NE passing by the Island of Yakushima, on the morning of the 12th. Travelling along our Pacific coast, the cyclone passed by the Island of Hachijo on the night of the 12th, and went out into the northern part of the North Pacific Ocean. General rainfall occurred in Japan proper during the passage of the depression. L. B. 760 mm.

108. *Depression* (11—13) *from Formosa.*—Appeared in the sea near Formosa on the night of the 11th, and moved towards NE in a way parallel to that of the former. L. B. 760 mm.

109. *Continental depression* (13—15) *from North China.*—Appeared in North China on the night of the 13th, and moved towards SE. On the 14th the depression passed over the Japan Sea and Hokkaido. It passed the Pacific on the morning of the 15th. L. B. 745 mm.

110. *Depression* (14—15) *from the Gulf of Korea.*—Developed in the Gulf of Korea on the morning of the 14th, and travelled over eastern Siberia towards NE, and passed into the Okhotsk on the 15th. L. B. 745 mm.

111. *Continental Depression* (16—17) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the afternoon of the 16th and moved on an easterly

course. On the afternoon of the 17th the depression crossed the southern part of Kiushiu and passed the Pacific. L. B. 756 mm.

112. *Continental Depression* (16—18) *from North China.*—Appeared in North China on the morning of the 16th, and travelled over Manchuria and Eastern Siberia on the 17th. On the morning of the 18th the depression crossed South Saghalien and passed into the Pacific. This depression caused stormy weather in the Northern Japan and Hokkaido. L. B. 735 mm.

113. *Continental Depression* (16—18) *from North China.*—Coming from North China, this depression appeared near the Liaotung peninsula on the night of the 16th. Traversing the northern part of Korea, it entered the Japan Sea. On the morning of the 18th the depression passed over South Hokkaido, and finally went out into the Pacific. L. B. 742 mm.

114. *Continental Depression* (21—23) *from the Yangtse Valley.*—Appeared in the Yangtse Valley on the afternoon of the 21st and made its way towards the northeast. On the afternoon of the 22nd, it passed through the Tsushima Straits, and then travelled along the coast of the Japan Sea. On the morning of the 23rd the depression crossed NE of Japan and passed into the Pacific. L. B. 740 mm.

115. *Continental Depression* (22—23) *from North Korea.*—Appeared in North Korea on the morning of the 22nd. Moving towards the east, the depression travelled over the Japan Sea. On the morning of the 23rd it crossed the southern part of Hokkaido and passed towards South Kuriles. L. B. 734 mm.

116. *Depression* (25—27) *from the vicinity of the Yaeyama group.*—Appeared near the Yaeyama group on the night of the 25th and made its way towards the northeast. On the afternoon of the 26th, it approached the southern coast of Kiushiu and then travelled along our Pacific coast. On the afternoon of the 27th the depression passed south of Hachijo. L. B. 752 mm.

117. *Continental Depression* (28—30) *from North China.*—Appeared in North China on the morning of the 28th and travelled over North Korea and the Japan Sea. On the afternoon of the 29th the depression crossed the southern part of Hokkaido and passed towards South Kuriles. L. B. 763 mm.

II. REMARKABLE TYPHOONS.

1. Typhoon of June 20 to 24.

On June 20 this typhoon appeared in the Pacific to the east of the Philippine Islands. Moving towards NW the typhoon centre approached the east coast of Luzon where it recurved toward NE on the morning of the 21st. On the afternoon it passed over the sea to the east of Formosa and entered into the Eastern Sea of China. Travelling along the north side of the Riukiu Islands this rotatory storm visited Southern Kiushiu on the 22nd. On the morning of the next day it passed to the south of Cape Ashizuri and landed on the Kii-peninsula. Thence it traversed Southeastern Japan and entered again into the Pacific to the east of Japan Proper. On the morning of the 24th the typhoon visited Southern Kuriles after passing over the sea to the south of Hokkaido.

We give below the direction and velocity of the progressive motion of this cyclonic centre :—

Date	Hour	Position of Centre		Direction	Velocity
21st	2pm	23°20° N	122° E	NE	40.2 km.p.h.
„	10pm	25 35	124	NE	17.2
22nd	6am	26 30	125	NE	46.7
„	2pm	28 40	128	NE	32.8
„	10pm	30 10	130	NE	45.1
23rd	6am	32 10	133 10′	NE	59.9
„	2pm	34 50	137 25	NE	56.6
„	10pm	37 20	141 30	NNE	82.8
24th	6am	42 25	145 35	NNE	86.1
„	2pm	46 50	151 45	NE	

From this table we see that the speed of this cyclonic centre increased rapidly as it went towards the east. It was about 20 km per hour at the neighbourhood of the Ishigaki Islands, but it became 20 km per hour and more off our east coast.

This cyclonic centre attended a rainstorm of unusual violence and caused a great deal of damage in the prefectures over which it traversed.

Owing to the heavy rainfall a land slide occured near Shioya in Hiogo prefecture, and caused a temporary suspension of railway trafic. At Shimonoseki city aquedacts flooded over the streets and inundated a thousand of houses. There also occurred a landslide which destroyed seven houses and wounded a few persons. Railway trafic was temporarily suspended.

2. Typhoon of August 3 to 8.

Acoording to the Bulletin for August, 1908 published by the Manila Central

Observatory this typhoon was first noticed on July 28 in the Pacific to the east of the southern part of the Archipelago.

On the 29th the cyclonic centre approached the east coast of Southern Luzon. From July 29 to August 2 the typhoon moved approximately towards NNW. On the 3rd it appeared in the Pacific to the east of the Philippine Islands.

On the 4th the typhoon recurved towards NE in the Pacific to the south of the Riukiu Islands. After recurving it moved over the sea to the east of the group of Islands and appeared on the 7th off Southern Japan.

On the night it traversed Central Japan and entered on the early morning of the 8th into the Japan Sea. Thence it moved along the northwest coast of Japan and off the west coast of Hokkaido and finally went to Southern Saghalien.

We give in the following table the direction and speed of the typhoon centre :—

Date	Hour	Position of Centre		Direction	Velocity
3rd	10pm	21°50′ N	127° E	N	11.5 km.p.h.
4th	6am	22 40	127 15	NNE	11.5
„	2pm	23 30	127 30	NNE	11.5
„	10pm	24 15	127 45	NNE	14.8
5th	6am	25 15	128 10	NE	8.2
„	2pm	25 45	128 30	NE	8.2
„	10pm	26 20	128 40	NE	12.3
6th	6am	27 5	129 15	NE	13.1
„	2pm	27 50	129 55	NE	14.8
„	10pm	28 45	130 30	NE	27.9
7th	6am	30 25	132	NE	37.7
„	2pm	32 30	134	NE	52.5
„	10pm	35 20	137 10	N	79.5
8th	6am	40 55	138 40	NNE	50.8
„	2pm	44 25	140 15	NNE	

The motion of this typhoon was rather slow in the Pacific, but it became greatly accelerated in the Japan Sea. The average speed was about 10 km per hour in the Pacific and about 50 km per hour in the Japan Sea.

This cyclonic centre attended a heavy rainstorm over this country. When this centre was in the Bay of Ise a rainstorm of unusual violence occurred in Japan proper, and heavy rain fell at several localities, causing sudden rise of many rivers which resulted in a great deal of damage in life and property.

At Nagoya the barometer fell to 730.9mm at 9 : 30 pm. Owing to a heavy rainfall about 6000 houses in the city were inundated. In the prefecture of Tochigi a barrack and a school house were destroyed. At Tonosawa, a well known summer

resort in Hakone a hotel was destroyed by a landslide and several lodgers were wounded.

There were several incidents in sea. SS. "Bankokumaru" sunk with her crew off the coast of Boshiu Peninsula.

3. Typhoon of August 15 to 21.

The point of origin of this typhoon was not possible to designate with a sufficient accuracy. But it seems to be probable that this cyclonic centre came from the neighbouring sea of the Calorine Islands.

This typhoon appeared on the afternoon of the 15th to the south of the Yaeyama group of islands. Moving towards NE it passed between Formosa and Ishigakijima and penetrated the Continent at the neighbourhood of Wenchow. On the 19th the typhoon recurved towards NE at the neighbourhood of Ichan in the middle Yangtse valley. It crossed over the Gulf of Pechili and the Liaotung Peninsula on the morning of the 21st, still moving in a north-easterly direction.

During the passage of this cyclonic centre heavy rain fell in Formosa, especially in its southern portion. The total fall for the 56 hours from 9 pm on the 16th to 5 am on the 17th was 242 mm at Koshun; 101 mm at Taito; 269 mm at Tainan; 53 mm at Hokoto (Pescadores); 59 mm at Taichu; 25 mm at Taihoku and 16 mm at Keelung.

We give below the direction and speed of the typhoon:—

Date	Hour	Position of Centre		Direction	Velocity
15th	10pm	22°25′ N	124°10′ E	NW	16.4 km.p.h.
16 „	6am	23 25	123 30	NW	17.2
„	2pm	24 30	123	NW	9.8
„	10pm	25 5	122 30	NW	11.5
17th	6am	25 50	122 5	NW	13.1
„	2pm	26 35	121 35	NW	9.8
„	10pm	27 25	121 5	NW	9.8
18th	6am	28 15	120 30	NW	16.4
„	2pm	29 20	119 50	NNW	

4. Typhoon of August 22 to 29.

This typhoon originated probably in the neighbourhood of the Marshall Islands. On the 22nd it appeared to the southeast of the Riukiu Islands and moved towards NW. After passing by the neighbourhood of Okinawa Island on the night of the 22nd it entered into the Eastern Sea. On the afternoon of the 25th the typhoon crossed the 31st parallel and recurved towards NNE. Becoming very quickly accelerated this cyclonic centre crossed over central Korea on the morning of the

27th, and travelled along the east coast of Siberia and went to Sakhalin Island on the morning of the 29th.

The typhoon caused heavy storm and rough sea in the Eastern sea, and resulted in disastrous incidents.

S S. "Donean" sunk near the Goto Islands off Western Kiushiu. She seems to entered into the so-called dangerous semi-circle of the cyclonic storm.

In Northern Korea occurred on the early morning of the 27th a heavy rainstorm. Rain fell in torrents during 3 hours from 6 am to 2 pm. At Sonshing the total rainfall was 100 mm. Waves dashed on the shores and gales blow down many fenses and trees. The storm caused a heavy damage to plantations there.

We give below the velocity and direction of the typhoon centre :—

Date	Hour	Position of Centre		Direction	Velocity
22nd	6am	22°50′ N	129°50′ E	NW	28.7
,,	2pm	24 30	128 20	NW	23.8
,,	10pm	25 55	127 10	NNW	10.7
23rd	6am	26 35	126 45	NNW	13.1
,,	2pm	27 20	126 10	NNW	9.8
,,	10pm	27 55	125 50	NNW	8.2
24th	6am	28 25	125 30	NNW	7.4
,,	2pm	28 55	125 10	NNW	5.7
,,	10pm	29 20	125 5	N	8.2
25th	6am	30	124 50	N	5.7
,,	2pm	30 25	124 45	N	7.4
,,	10pm	30 55	124 40	N	11.5
26th	6am	31 45	124 45	NNE	14.8
,,	2pm	32 45	125	NNE	20.5
,,	10pm	34 15	125 30	NE	32.0
27th	6am	36 20	126 35	NE	53.3
,,	2pm	39 50	128 45	NE	36.9
,,	10pm	42	130 35	NE	32.8
28th	6am	44	132 40	NE	29.5
,,	2pm	45 30	134 40	NE	27.1
,,	10pm	46 35	136 55	ENE	39.4
29th	6am	47 50	140 30	ENE	

5. Typhoon of September 7 to 13.

This typhoon first appeared on the 7th to the east of Luzon. Moving towards the north it appeared in the Pacific to the south of the Riukiu Islands. Thence, it recurved towards NE and approached on the 9th the Riukiu Islands. On the 10th

the typhoon passed over the neighbourhood of Oshima Island and continued its northeasterly movement. On the 12th it passed very close by the south of Hachijo and finally disappeared from our area.

This typhoon caused a rainstorm of intense nature on our Pacific coast. In Hachijo Island the barometer fell to 739.7 mm at 10 pm on the 12th, and the wind velocity of 30 metres per second was observed at 8 pm on the same day.

We give below the direction and velocity of this typhoon :—

Date	Hour	Position of Centre		Direction	Velocity
7th	6am	19° N	127.45 E	NNW	6.0
8th	6am	20 20	127 30	N	14.5
9th	6am	23 25	128	NE	23.8
,,	2pm	24 55	129	NE	9.8
,,	10pm	25 30	129 30	NE	20.5
10th	6am	26 35	130 45	NE	8.2
,,	2pm	27	131 10	NE	22.1
,,	10pm	28	132 45	NE	14.5
11th	10pm	30 10	135 30	NE	41.8
12th	6am	32	138 25	NE	12.3
,,	2pm	32 25	139 10	NE	8.2
,,	10pm	32 40	140	NE	18.9
13th	6am	33 20	141 40	NE	

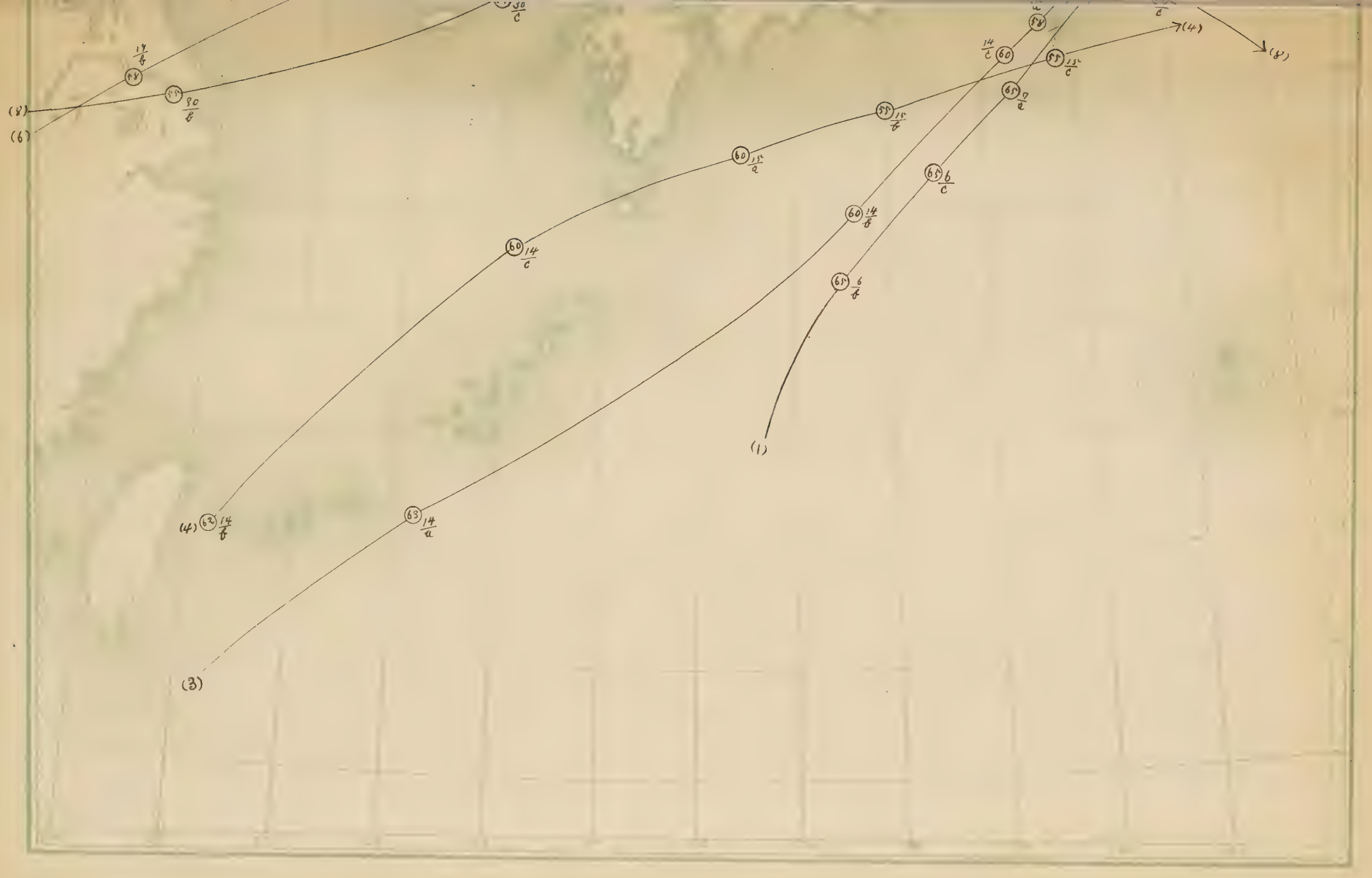
6. Typhoon of October 13 to 15.

This typhoon was first noticed on the 9th to the east of Yap Island. Advancing towards WNW the cyclonic centre appeared on the 12th to the southeast of Luzon. According to the Manila Central Observatory the centre was located at 6am of the 12th to the east of the central part of Luzon at a distance of almost 300 miles. The typhoon crossed over the northern part of Philippines on the 13th and over the southern part of the Formosa channel on the 14th. On the same day the vortex penetrated the Continent at the neighbourhood of Swatow.

Severe rainstorm and rough sea were experienced in the seas and ocean over which the typhoon travelled. On the 12th heavy rain fell in Northen Formosa and several rivers and brooks flooded over their banks and inundated about 2000 houses. About forty crafts and junks were sunken; seven persons drowned and forteen were missed.

On the morning of the 12th the United States battle-ship fleet, which, on route from Manila to Yokohama, was at this time on 21°30′ N and 125° E, encountered this terrible typhoon.

TRACKS
OF THE
BAROMETRIC DEPRESSIONS.
January, 1908.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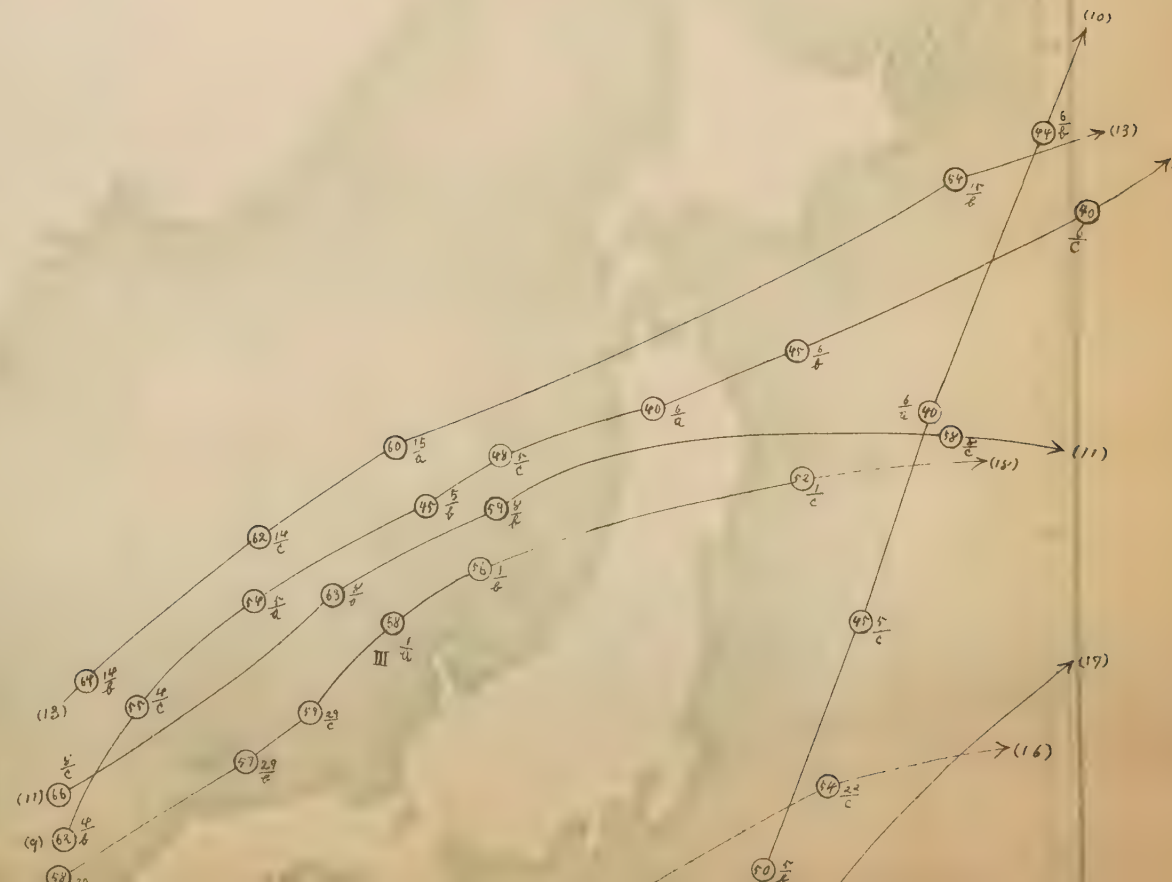
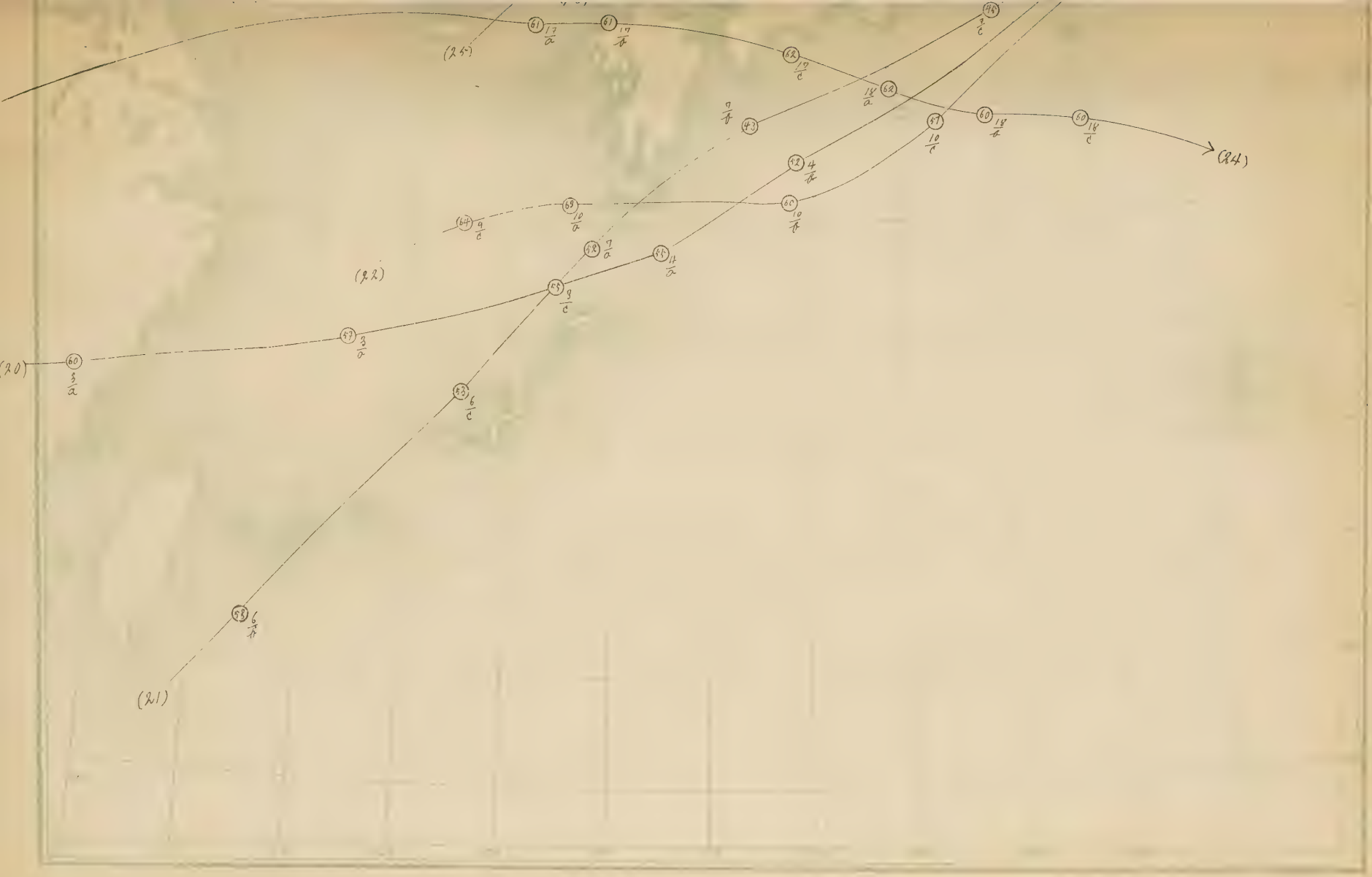
TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

February, 1908.



TRACKS
OF THE
BAROMETRIC DEPRESSIONS.
March, 1908.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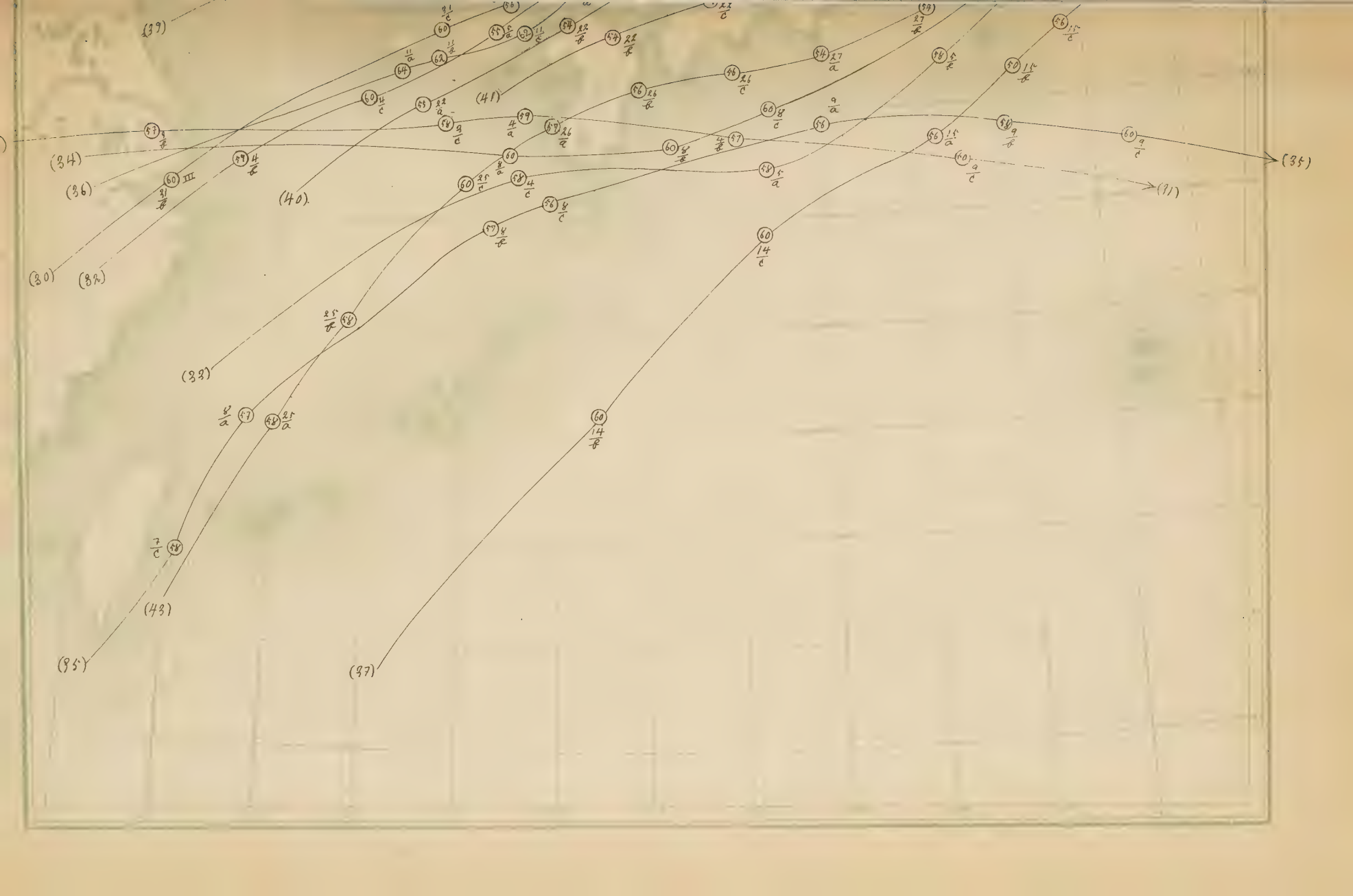
PL.IV.

TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

April, 1908.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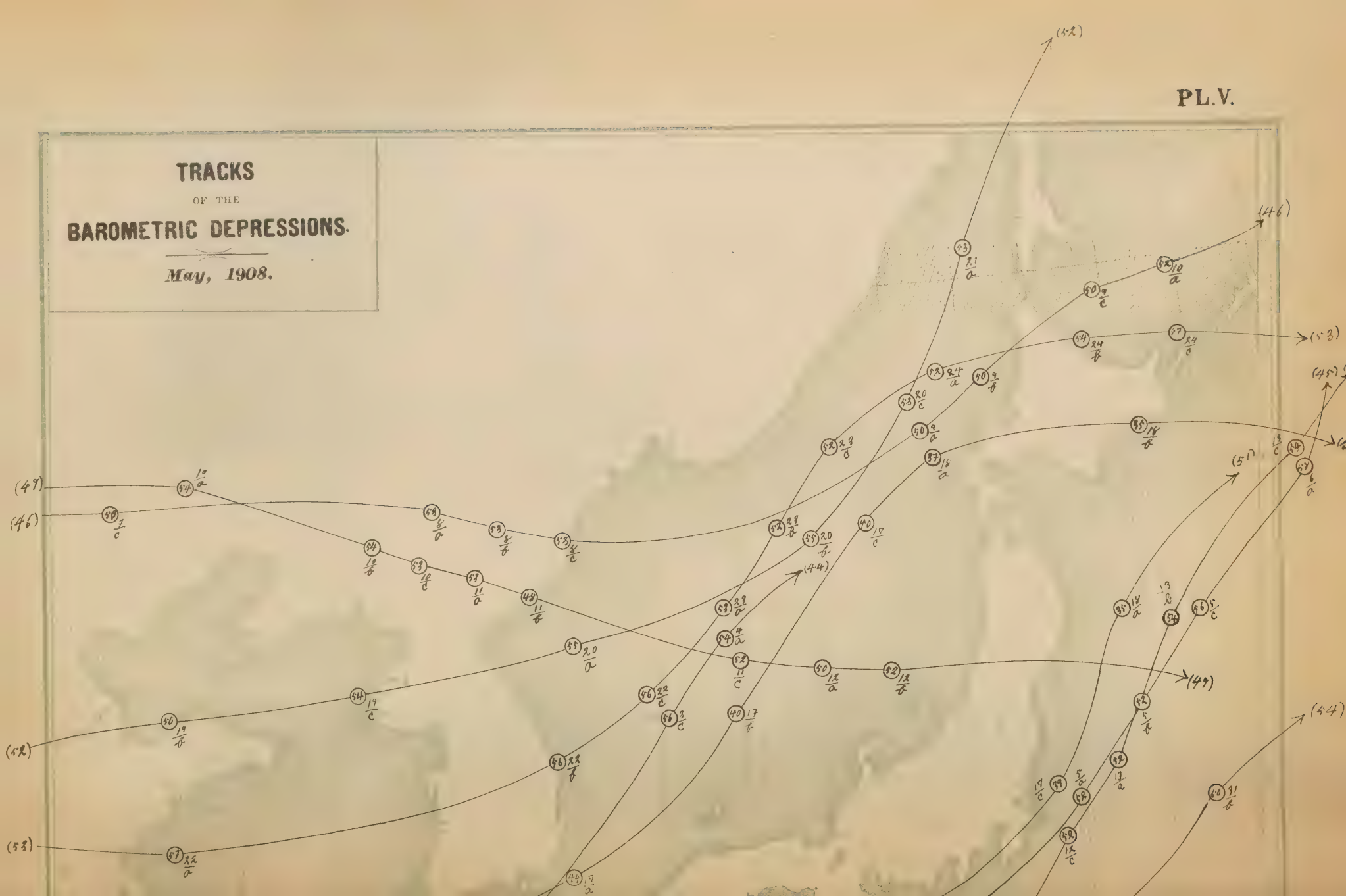
PL.V.

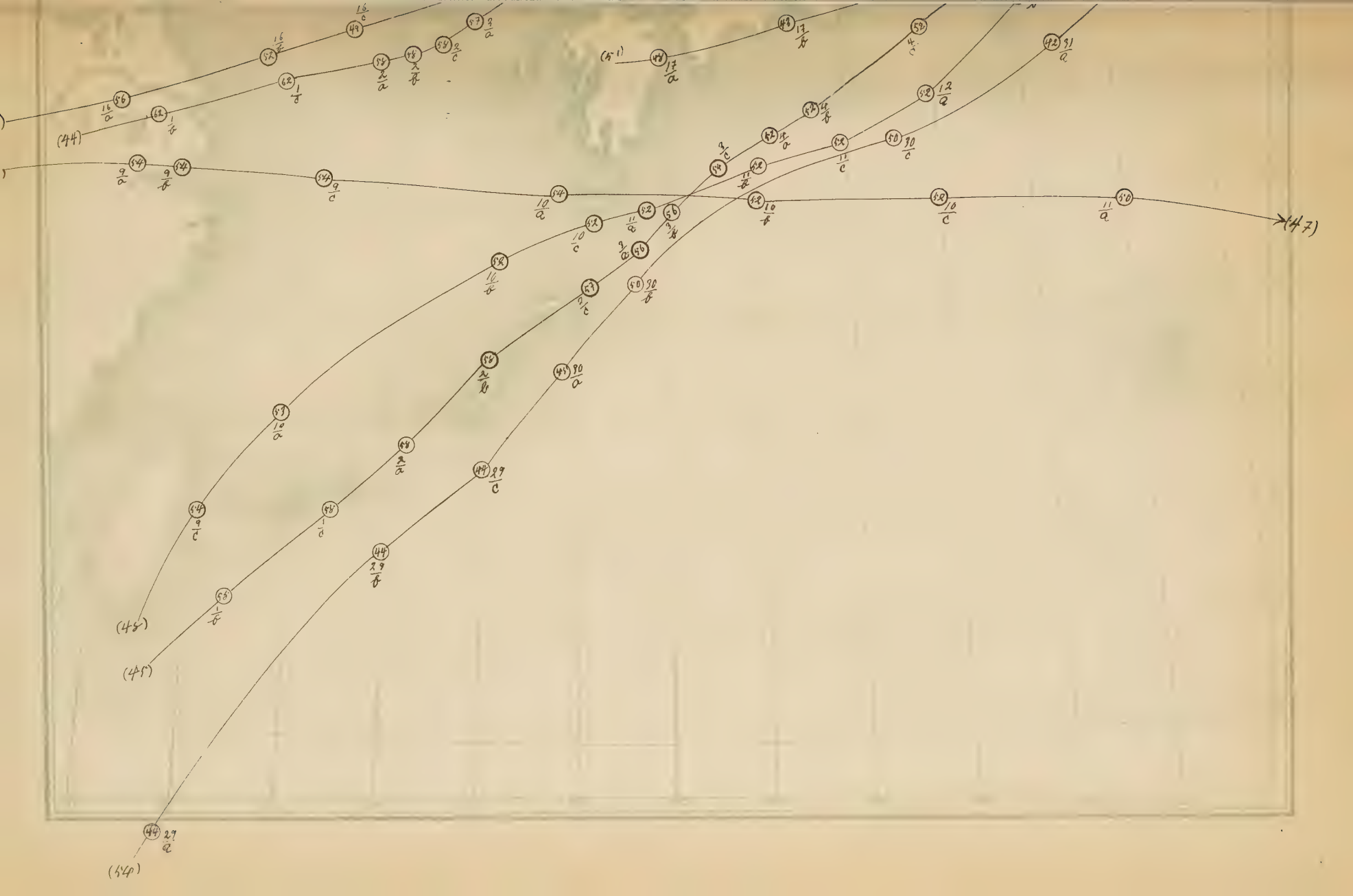
TRACKS

OF THE

BAROMETRIC DEPRESSIONS.

May, 1908.

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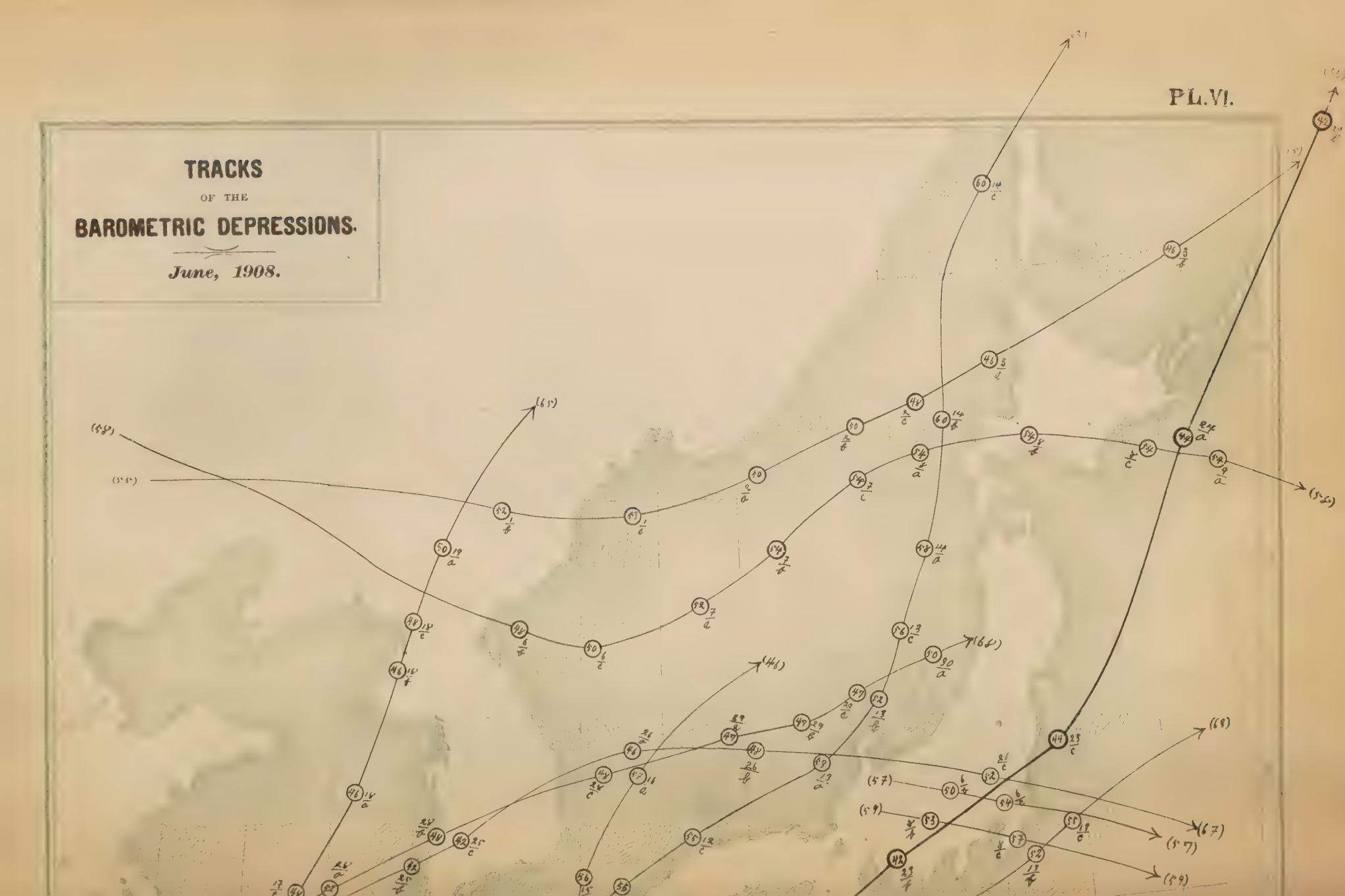
PL.VI.

TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

June, 1908.



TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

July, 1908.

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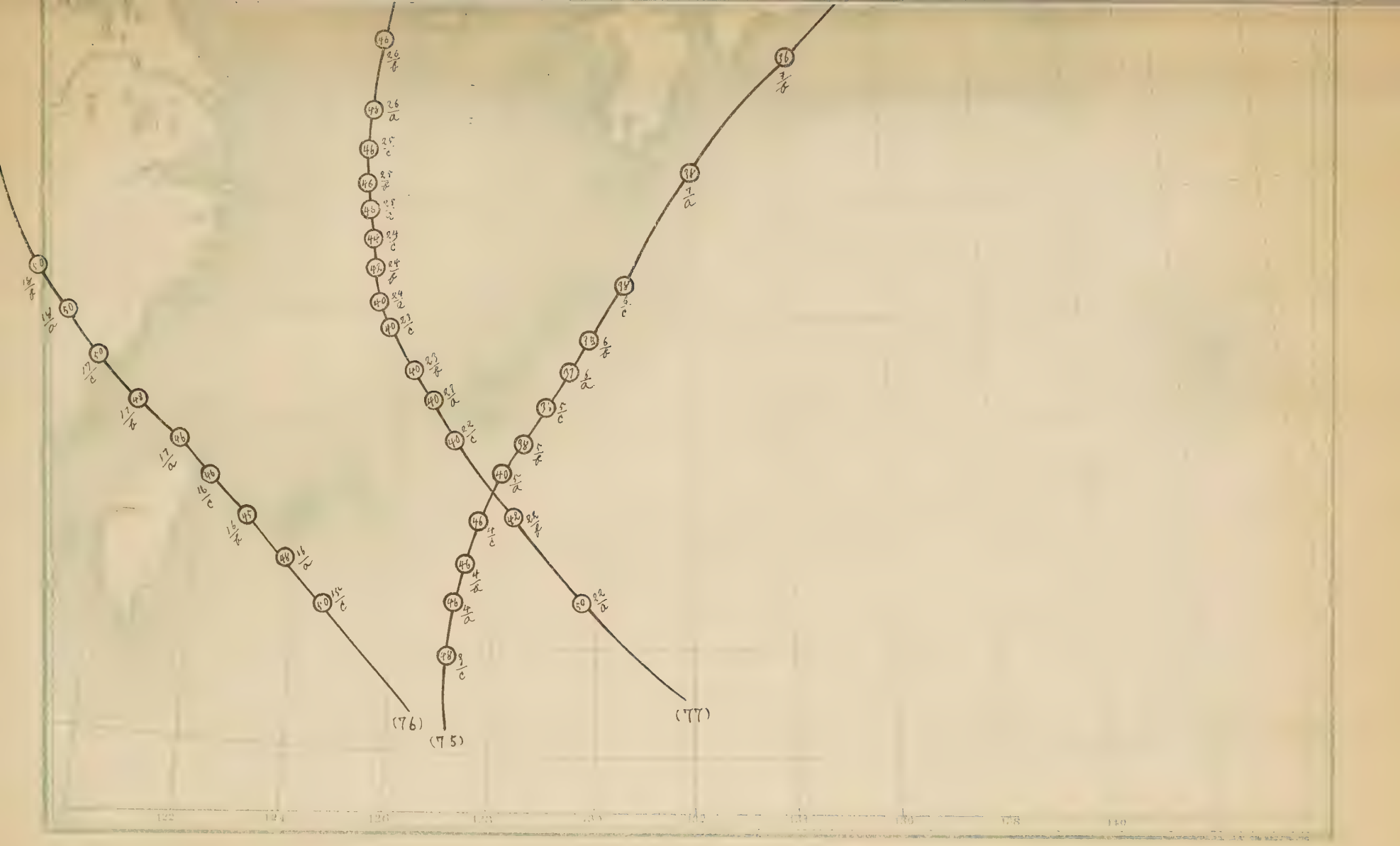
VI

PL. VIII.

TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

August, 1908.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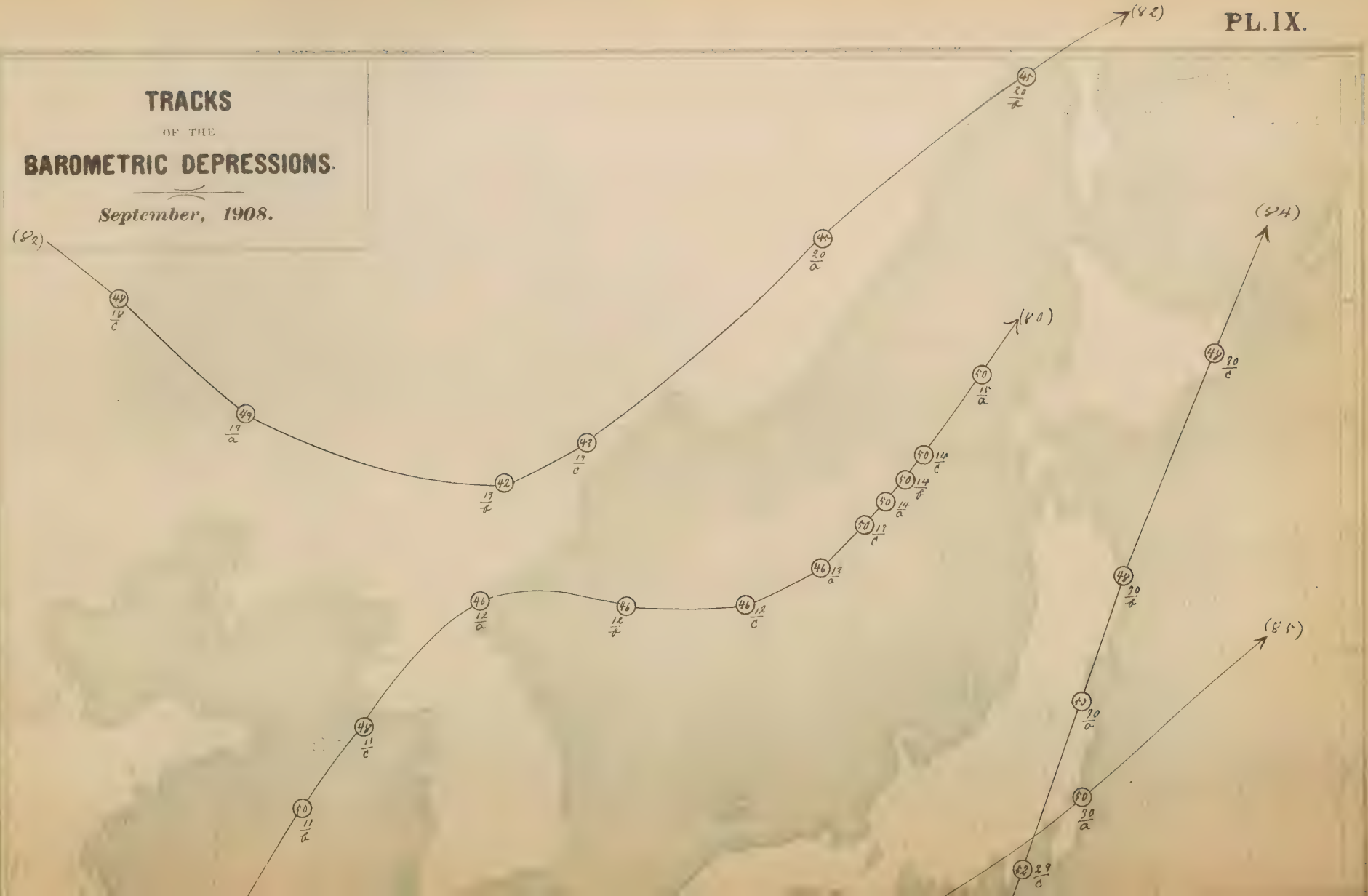
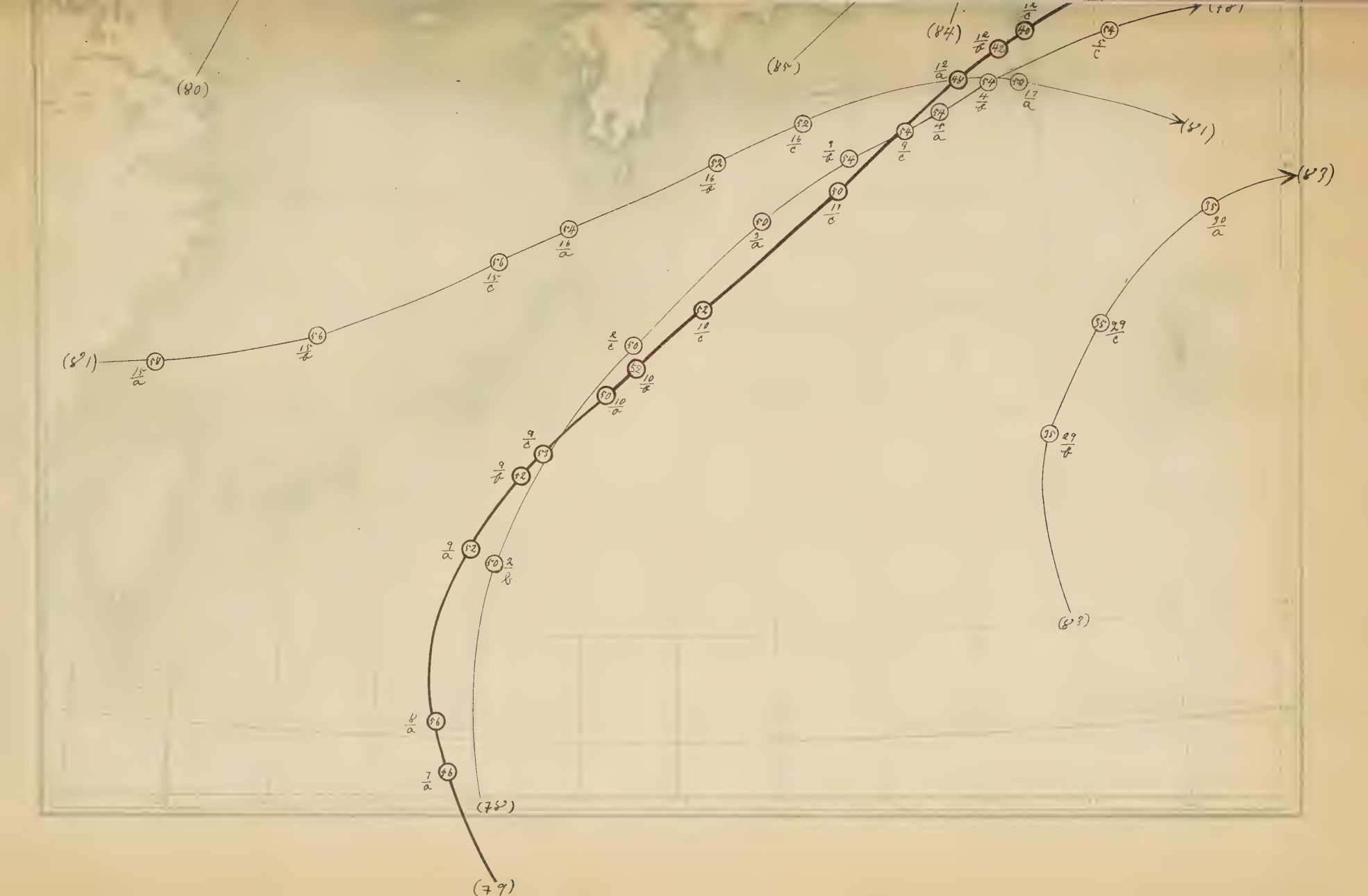
(77)

TRACKS
OF THE
BAROMETRIC DEPRESSIONS.

September, 1908.

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PL. X.

TRACKS

OF THE

BAROMETRIC DEPRESSIONS.

October, 1908.

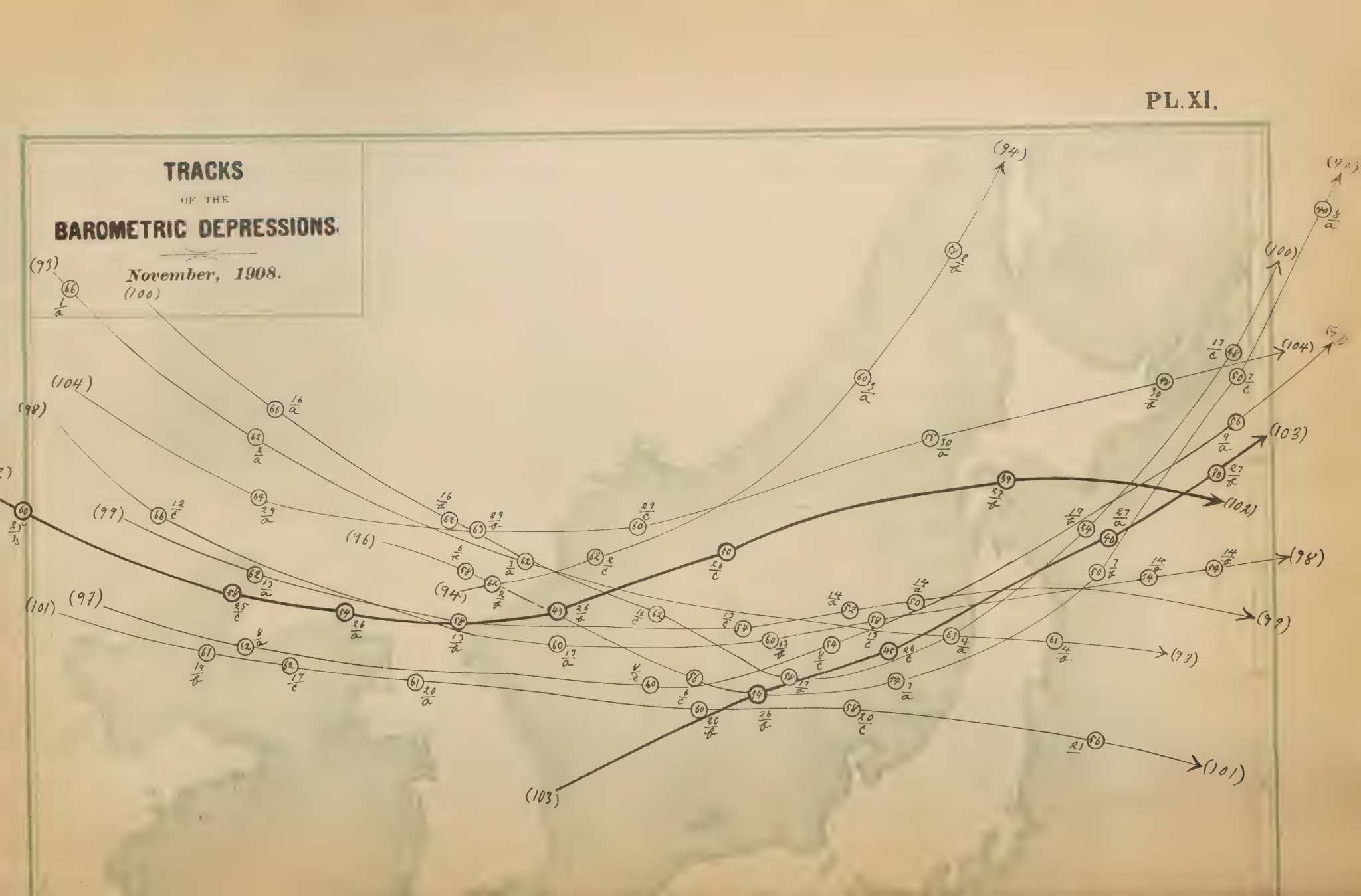
60 23/a
60 24/a
60 26/b
60 27/a
(90)
45 19/a
50 18/a
46 17/a
50 16/a
(89)
17/a
13/a
(88)

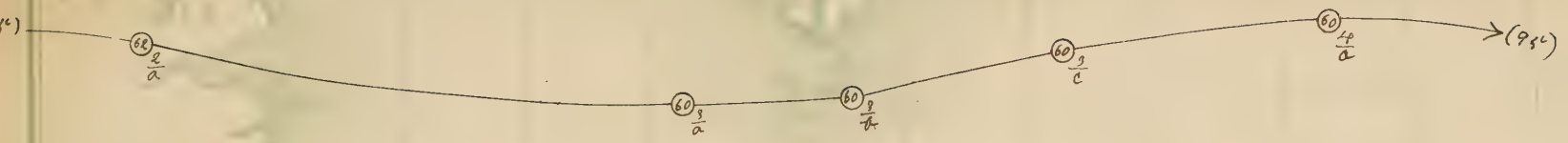
TRACKS

OF THE

BAROMETRIC DEPRESSIONS.

November, 1908.




(4c)
60
2/a
60
3/a
60
3/4c
60
3/c
60
4p/a
(9,4c)

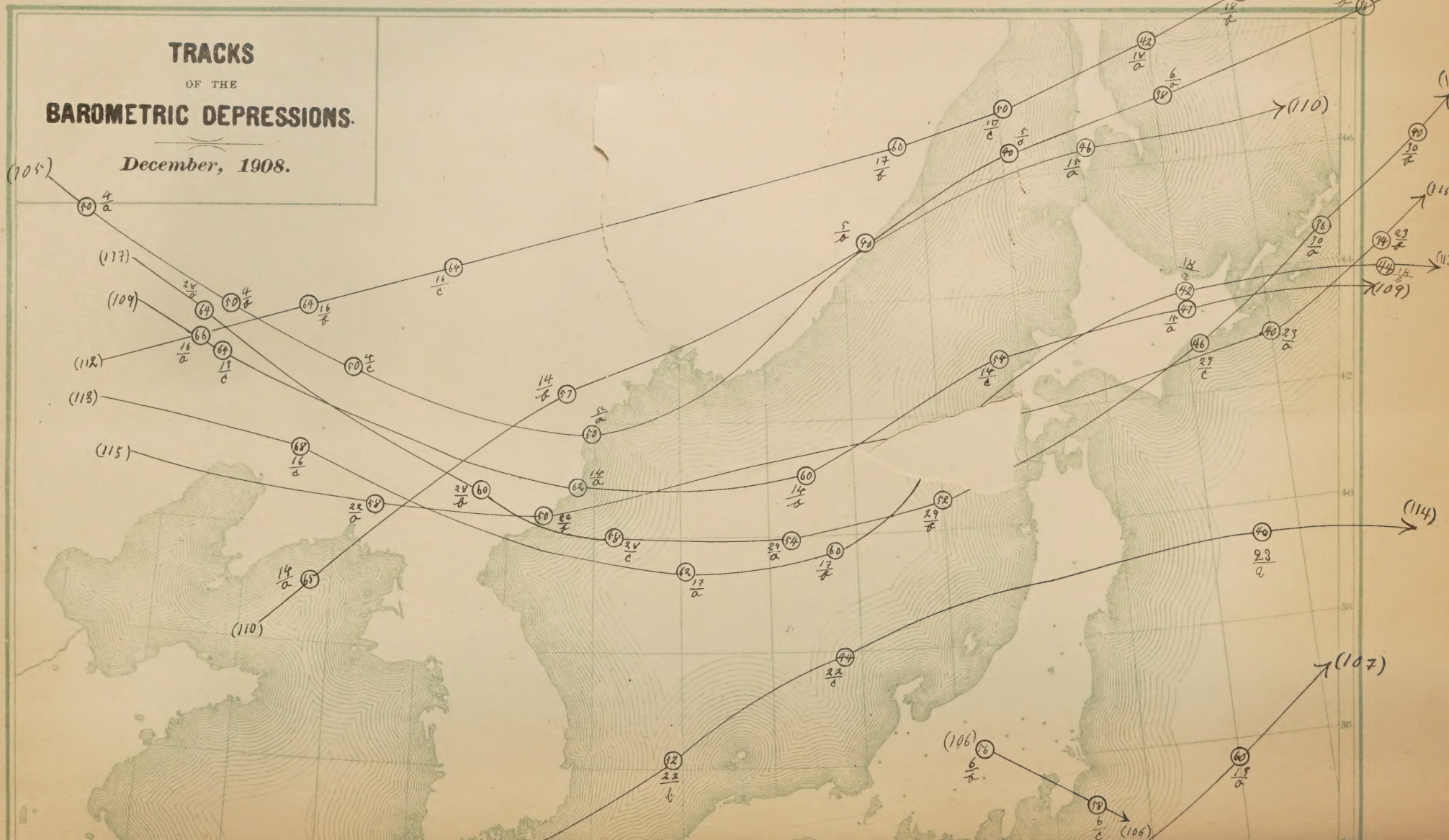
PL. XII.

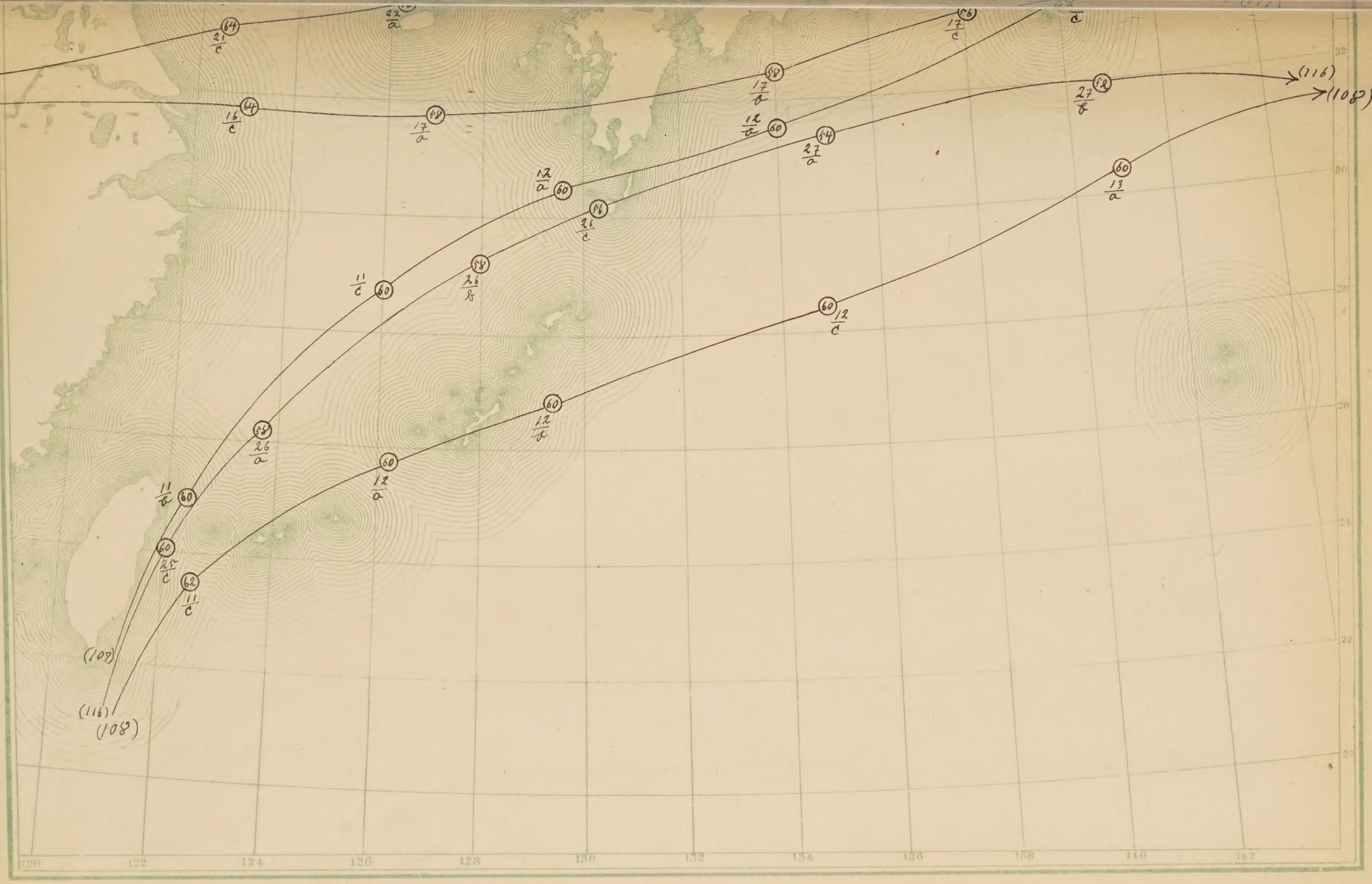
TRACKS

OF THE

BAROMETRIC DEPRESSIONS.

December, 1908.




(111)
64 21/c
22/a
17/c
17/a
16/c
44
48
17/a
17/c
12/a
60
27/a
27/c
(116)
(108)
13/a
12/a
26/c
26/a
11/c
25/c
62
(109)